

P21788.A01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Lei WANG

Serial No : Not Yet Assigned

Filed : Concurrently Herewith

For : A METHOD FOR LIGHTING- AND VIEW-ANGLE-INVARIANT FACE
DESCRIPTION WITH FIRST- AND SECOND-ORDER EIGENFEATURES

PRELIMINARY AMENDMENT

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Prior to calculation of the filing fees and the examination of the above-identified patent application on the merits, the Examiner is respectfully requested to amend the claims as follows:

IN THE CLAIMS

Please amend the claims as follows (a marked-up copy of the claim amendments is provided as an attachment to this Amendment):

14. (Amended-Clean Text) A method in claim 1 of getting the adjusted second-order eigenfeatures, comprising the steps of:

getting the recovered adjusted second-order eigenface by multiplying the said quantized second-

P21788.A01

order eigenface matrix with said quantization step; and

getting the second-order eigenfeatures by multiplying each column-wise recovered
adjusted

second-order eigenface with the row-wise image.

15. (Amended) A method in claim 3 of getting the adjusted first-order eigenfeatures,
comprising the steps of:

getting the recovered adjusted first-order eigenface by multiplying the said quantized
first-

order eigenface matrix with said quantization step; and

getting the first-order eigenfeatures by multiplying each column-wise recovered
adjusted

first-order eigenface with the row-wise image.

22. (Amended) A method of measuring lighting-invariant similarity between faces,
comprising the steps of:

extracting the eigenfeatures of the faces for lighting-invariant face description with
the method described claim 1;

getting the Euclidean distances of said eigenfeatures of the faces; and

choosing the smallest Euclidean distance to indicate the best matching pair of faces.

23. (Amended) A method of measuring view-angle-invariant similarity between faces, comprising the steps of:

extracting the eigenfeatures of the faces for view-angle-invariant face description with the method described in claim 3;

getting the Euclidean distances of said eigenfeatures of the faces; and

choosing the smallest Euclidean distance to indicate the best matching pair of faces.

28. (Amended) A method in claim 1 of coding lighting-invariant face descriptor, comprising the step of:

looking up the code table generated for each quantized eigenfeature and using the corresponding code word to represent said quantized eigenfeature.

29. (Amended) A method in claim 3 of coding viewing-angle-invariant face descriptor, comprising the step of:

looking up the code table generated for each quantized eigenfeature and using the corresponding code word to represent said quantized eigenfeature.

30. (Amended) A method of extracting features for general face description, comprising the steps of:

P21788.A01

getting adjusted first-order eigenfeatures of a face image with the method in the claim

7;

quantizing said adjusted first-order eigenfeatures; and

selecting features to construct face descriptor to describe faces from the said quantized first-order eigenfeatures.

31. (Amended) A method of extracting features for general face description, comprising the steps of:

getting adjusted first-order eigenfeatures of a face image with the method in the claim

7;

quantizing said adjusted first-order eigenfeatures; and

selecting features to construct face descriptor to describe faces from the said quantized first-order eigenfeatures; and

coding said selected eigenfeatures in the face descriptor.

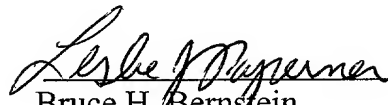
REMARKS

By the above amendment, the claims have been amended to delete multiple dependency.

P21788.A01

If there should be any questions, the Examiner is invited to contact the undersigned
at the telephone number listed below.

Respectfully submitted,
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MARKED-UP COPY OF AMENDED CLAIMS

14. (Amended) A method in claim 1 of getting the adjusted second-order eigenfeatures, comprising the steps of:

getting the recovered adjusted second-order eigenface by multiplying the said quantized second-

order eigenface matrix with said quantization step [in the claim 11]; and

getting the second-order eigenfeatures by multiplying each column-wise recovered adjusted

second-order eigenface with the row-wise image[;].

15. (Amended) A method in claim 3 of getting the adjusted first-order eigenfeatures, comprising the steps of:

getting the recovered adjusted first-order eigenface by multiplying the said quantized first-

order eigenface matrix with said quantization step [in the claim 12]; and

getting the first-order eigenfeatures by multiplying each column-wise recovered adjusted

first-order eigenface with the row-wise image.

22. (Amended) A method of measuring lighting-invariant similarity between faces, comprising the steps of:

extracting the eigenfeatures of the faces for lighting-invariant face description with the method described claim 1 [in claims 1 and 2];

getting the Euclidean distances of said eigenfeatures of the faces; and

choosing the smallest Euclidean distance to indicate the best matching pair of faces.

23. (Amended) A method of measuring view-angle-invariant similarity between faces, comprising the steps of:

extracting the eigenfeatures of the faces for view-angle-invariant face description with the method described in claim 3 [claims 3 and 4];

getting the Euclidean distances of said eigenfeatures of the faces; and

choosing the smallest Euclidean distance to indicate the best matching pair of faces.

28. (Amended) A method in claim 1 of coding lighting-invariant face descriptor, comprising the step of:

looking up the code table generated [with the method described in claim 24] for each quantized eigenfeature and using the corresponding code word to represent said quantized eigenfeature.

P21788.A01

29. (Amended) A method in claim 3 of coding viewing-angle-invariant face descriptor, comprising the step of:

looking up the code table generated [with the method described in claim 25] for each quantized eigenfeature and using the corresponding code word to represent said quantized eigenfeature.

30. (Amended) A method of extracting features for general face description, comprising the steps of:

getting adjusted first-order eigenfeatures of a face image with the method in the claim

7;

quantizing said adjusted first-order eigenfeatures [with the method in the claim 19];

and

selecting features to construct face descriptor to describe faces from the said quantized first-order eigenfeatures.

31. (Amended) A method of extracting features for general face description, comprising the steps of:

getting adjusted first-order eigenfeatures of a face image with the method in the claim

7;

quantizing said adjusted first-order eigenfeatures [with the method in the claim 19];

and

P21788.A01

selecting features to construct face descriptor to describe faces from the said quantized first-order eigenfeatures; and
coding said selected eigenfeatures in the face descriptor.